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ORIGINAL ARTICLE

Exploring In-service EFL Teachers' Readiness for the Generative AI Age

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ABSTRACT

As Artificial Intelligence (AI) technologies progress rapidly, there is an increasing interest in utilizing these technologies to enhance both language teaching and learning experiences. Therefore, it is imperative to understand the perspectives held by educators to effectively integrate generative AI technologies and to capitalize on the possible advantages within English language education. This qualitative study aimed to explore the readiness of EFL teachers at tertiary level for implementing generative AI in Education (AIEd) tools in their profession as well as their perceptions of these tools in language teaching. Data were collected from 27 EFL teachers through teacher AI readiness scale, semi-structured individual interviews, and reflection papers. The quantitative findings indicated moderate AI anxiety but high perceived usefulness and positive attitudes toward AI, though participants reported mixed confidence in their ability to teach AI and in access to resources. The qualitative findings demonstrated varied familiarity with AIEd tools and expressed both benefits and challenges. Implications and directions for future research will be shared to inform educators, policymakers, and researchers.

Keywords: Artificial Intelligent, EFL teacher readiness, in-service EFL teachers, AIEd

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INTRODUCTION

The rapid advancements in artificial intelligence (AI) have captured the attention of researchers in education like in many other fields, resulting in an increased emphasis on investigating AI's potential applications in educational settings (Hwang et al., 2020). The integration of AI into education, known as AIEd, has introduced fresh opportunities for developing efficient learning experiences and enhancing technology-driven learning tools and environments. Incorporating AI technologies into English as a foreign language (EFL) teaching holds the promise of revolutionizing the traditional instructional methods and elevating the language learning experiences of learners. AI utilizes advanced deep learning algorithms to produce content that resembles human creations including audio, written text, simulations, code, images, 3D objects and videos (Lim et al., 2023). These technologies are advancing rapidly and are increasingly finding their place within the realm of language teaching and learning (Hwang, et al., 2020). Numerous AIEd tools strive to enhance teaching and learning processes by expanding educational access, supporting lifelong learning opportunities, offering adaptive and continual assessment, encouraging collaborative learning, delivering immediate personalized feedback, and enhancing the efficiency of various tasks such as administrative duties, feedback provision, and assessing learners' work (Chen et al., 2020; Holmes et al., 2019).

Whilst AI holds significant promise in enhancing EFL learning, EFL teachers may encounter several challenges when adapting to and utilizing AI to enhance the instructional quality in their teaching context. Implementing appropriate AI decisions may present a challenge for many practitioners in educational field (Kay, 2012). The realization of AI-supported language learning necessitates teachers' acceptance and creative lesson designs (Geng et al., 2021). While EFL teachers generally support the integration of AI technologies in the classroom, they may also have reservations because of various internal factors such lack of knowledge and skills, concerns regarding the effects of AI both for teachers and students (Sütçü & Sütçü, 2023). Therefore, before incorporating AI as a novel technology in EFL lessons, it becomes imperative to explore teacher's readiness to utilize such technologies along with both external and internal factors that may influence their perspectives.

A teacher's belief in the effectiveness of a particular technology like AI to support learning is heavily affected by their initial attitudes and opinions towards it (Sütçü & Sütçü, 2023). Hence, the objective of the present study is to investigate the readiness of in-service Turkish English language teachers to use generative AI tools in their practice. To this end, we aimed to answer the following research questions:

1. How ready do in-service English language teachers feel for the use of AIEd tools in their professional work?
2. What are in-service English language teachers' perceptions of AIEd tools?
3. How do AI-oriented in-service English language teachers integrate AIEd tools into their professional practices?

The results of this study may help reveal how in-service English language teachers perceive AIEd tools and to what extent they feel ready to implement these tools in their teaching context. In turn, such findings would hold significant implications that resonate within both pre-service teacher education programs and in-service teacher professional development units, contributing to the broader discourse on the utilization of AI in language education (Qiao and Zhao, 2023).

Artificial Intelligence

Definitions of AI vary because of the constant changes in what AI incorporates (Luckin et al., 2016). One perspective

views AI as machines or “computers which perform cognitive tasks, usually associated with human minds, particularly learning and problem-solving” (Baker and Smith, 2019, p.10). Another viewpoint describes AI as a set of computer skills, highlighting these systems’ ability to understand external data, learn, and adapt, mimicking human intelligence (Sindermann et al., 2021). Therefore, AI systems can imitate human thought and behaviors, and accomplish tasks that were previously only humans could do, including learning, remembering, inferring, and understanding human language (Cuiye, 2016; Xiaohong & Yanzheng, 2021). Despite the various perspectives on AI, they move toward a shared understanding: "Artificial intelligence (AI) is a broad term used to describe a collection of technologies that can solve problems and perform tasks to achieve defined objectives without explicit human guidance" (Healey, 2020, p. 3). In this paper, we adopt the definition proposed by Baker and Smith (2019).

Artificial Intelligence in Education (AIEd)

AI-driven technologies are transforming the English language teaching practices, improving both the learning and teaching experiences of students and educators alike. Offering from intelligent tutoring systems and automated assessment tools to translation and conversational chatbots, AIEd is reshaping language instruction (Zhai, 2023). Numerous AIEd tools are currently utilized in educational contexts, catering not only to learners and teachers but also administrators. Baker and Smith (2019) categorized these AI tools into three groups: a) learner-facing, b) teacher-facing systems, and c) system-facing AI tools. Learner-facing tools are intelligent tutoring systems that students employ to receive and comprehend new information. These systems have the capacity to organize and distribute learning materials based on student’s needs, offer automated feedback, and promote collaboration between learners. Teacher-facing tools, on the other hand, are systems utilized by teachers to reduce their workload, and provide insights into students’ performance, (e.g., classroom management, assessment, feedback). Finally, system facing AIEd tools, which are the least widespread form of AIEd, assist school administrators or education system managers in making decisions (e.g., calculating future performance, processing student’s transcript). These tools are utilized for various purposes ranging from scheduling timetables to predicting inspections.

A growing body of research has shown that AI integration may enhance the teaching and learning experiences (Jiang, 2022; Sumakul et al., 2022). Artificial intelligence (AI), as a machine-based system that can make predictions, recommendations, diagnoses, and decisions, has gained importance in educational community due to its capacity to assist learning in various settings (Hwang et al., 2020a). AI holds the potential to provide tailored support and raise knowledge-gap awareness, empowering educators to offer personalized and adaptive instruction effectively (Guan et al., 2020), and conduct real-time assessment (Chen et al., 2021). Moreover, AI-enabled educational systems can empower educators to detect at-risk students in real-time, enabling timely interventions by evaluating classroom interactions and student engagement (Tsai et al., 2020).

With new technologies emerging each day, it becomes crucial to introduce individuals to the technical background and fundamental concepts of these technologies, namely algorithms, data structures and programming or coding, in the early stages of individuals’ education. Like traditional literacy, including skills like writing, reading, mathematics, AI literacy will emerge as a significant concern in the future (Ayanwale et al., 2022). According to the UNESCO report, eleven countries currently have government-endorsed AI curricula, while a few others are in the developmental process. For instance, countries such as China have begun to teach AI in primary and secondary levels (Han et al., 2018; UNESCO, 2022). By being exposed to AI literacy, students may also establish a strong foundation not only for their university studies but also future careers (Ayanwale et al., 2022).

Artificial Intelligence in Language Teaching

The onset of the 21st century has brought about radical changes in the educational landscapes affecting learning inputs, processes, and outcomes. Intelligent systems such as AI contribute to reshaping the roles of schools, teachers and learners (Selwyn,2019; Tuomi et al., 2018; Wang et al., 2024). Within EFL contexts, the utilization of AI in English language learning contexts brings about numerous benefits both for the teachers and students (Moybeka et al., 2020). Pokriváková (2019) provides a customized categorization regarding the use of AIEd in language teaching context, including creating personalized materials, utilizing translation tools, employing writing assistants to support and improve writing skills, using chatbots to develop speaking skills, providing collaborative learning support, substituting for on-on-one teaching, creating authentic learning contexts, and tutoring in online language learning applications and platforms.

An increasing number of studies have investigated EFL teachers' perspectives regarding the AI integration into teaching to gain insights into the AIEd. Johnson and Smith (2019) reported that EFL teachers perceived AI technologies as providing personalized learning opportunities and viewed them as a potential solution to address challenges posed by large class sizes and limited resources. Similarly, Davis (2020) found that EFL teachers believed AI tools had the potential to facilitate differentiated instruction by assisting them in tailoring their instruction according to their students' needs. These perceptions were echoed in several studies that examined students' perceptions. Liu et al. (2021) found that students perceived AI as helpful in improving their language learning experiences as it provided personalized instruction and immediate feedback, resulting in improvements in writing performance, self-efficacy, and self-regulation.

AI-driven chatbots have been utilized to enhance EFL students' speaking skills and several studies showed their effectiveness in developing speaking skills such as reading aloud and answering questions (e.g., Kim et al., 2020). In another study, Jeon (2022) aimed to generate an inventory of affordances that chatbots offer in EFL classroom. Despite reporting pedagogical, technological, and social affordances, interviews with students demonstrated certain limitations stemming from the chatbots. Some students felt unprepared to have a conversation in English with the chatbots, while others required teacher assistance, and some expressed a preference for engaging in conversations with peers over chatbots. The impact of AIEd technologies as intelligent writing assistants was also investigated. Barrot (2022) asserted that Grammarly helped students identify their errors, evaluate them based on predefined assessment rubrics, and guide them in improving their writing.

Despite the potential benefits, several research has emphasized various concerns regarding the integration of AIEd tools. Some scholars asserted that generative AI might have negative influences on student motivation and learning with the possibility of a decline in writing and critical thinking skills (Warschauer et al., 2023), affecting student learning outcomes (Chan & Lee, 2023). Furthermore, legitimate and genuine concerns exist about how the tools can be utilized ethically (Rudolph et al., 2023).

Language Teacher Readiness for Using Generative AIEd Tools in Their Profession

Educators have demonstrated an enhanced proficiency in digital competencies and technology adoption mostly due to COVID-19 pandemic (Howard et al., 2022). Nevertheless, language teachers may still need to boost their specialized digital competencies in AI to efficiently integrate these tools into their practices (Moorhouse, 2023). This necessity

arises from the dramatic advancements in generative AI tools compared to their predecessors (Kohnke et al., 2023). Despite the benefits afforded by AIEd technologies, teachers may not possess the required technical skills and competencies to utilize generative AI applications (Ally, 2019; Seo et al., 2021).

Choi, Jang and Kim (2023) asserted that teacher training and support are vital for effective integration of AIEd in language teaching and learning contexts. In their study, most EFL teachers highlighted the necessity of professional development both to elevate their technological readiness and pedagogical utilization of AI. While offering AI-targeted professional development is significant, investigating teachers' readiness to utilize AI in their teaching contexts is imperative, as teachers' acceptance and disposition could indicate their interest in integrating technology and impact their teaching practices (Nikolopoulou et al., 2021). Consequently, the concept of AI readiness encapsulates the journey of educators and their students, transitioning from a state of unfamiliarity with AI and its capabilities to gaining a clear perspective of what AI can accomplish (Luckin et al., 2022).

Teachers approach the utilization of AIEd technologies with diverse perspectives and concerns. Research studies investigating generative AI readiness demonstrated a sense of unreadiness amongst experienced in-service teachers (e.g., Kohnke, Moorhouse, & Zou, 2023; Kaplan-Rakowski et al., 2023) and beginning teachers (Moorhouse, 2024). Some teachers may fear being replaced by these technologies in the future (Holmes & Tuomi, 2022), which may lead to reluctance to integrate AIEd technologies (Kohnke et al., 2023). In addition, the utilization of technology in education may not ensure that teachers are equipped to integrate technology into their teaching practices or guarantee the quality of instruction (Mercader & Gairn, 2020). Numerous teaching contexts experience challenges including the lack of infrastructure, funding, and support, which in return inhibit the widespread utilization of AIEd tools (Popenici & Kerr, 2017). Besides such external contributors, not possessing the necessary technical and pedagogical knowledge and expertise to utilize AIEd tools into practice may also prevent teachers from embracing these technologies (e.g., Ally, 2019). According to Sumakul et al. (2022) teachers' technological and pedagogical knowledge plays a significant role in considering the integration of AI into language teaching. As a result of these external and internal factors, teachers perceive themselves as lacking the skills to effectively utilize AIEd tools for enhancing both their teaching practices and student learning (Seo et al., 2021). Hence, it is crucial to explore teachers' readiness regarding AIEd utilization.

METHOD

Research Design

The current study employed a qualitative interpretive approach (Denzin & Lincoln, 2011) as it sought to explore the diverse perspectives of English language instructors. Specifically, the aim was to investigate the sense of readiness and perceptions of in-service English language teachers regarding AI. The research was carried out at an English-medium university in Ankara, Turkey during the Spring 2024. The objective was to extract detailed insights into the lived experiences and perceptions of the participants (Creswell, 2008). Invitations, which contained information regarding the aims of the study, were sent via e-mail. Teachers who agreed to take part in the study were sent another email with the link to the AI readiness survey. For the interview and reflection paper stages, all communication was conducted face-to-face.

Setting and Participants

The participants of the study were 27 in-service English language teachers who were teaching English as a foreign

language in English preparatory school at a private university in Ankara, Turkey. Participants' age ranged from 26 to 58 years old. Of the 27 participants, 23 were female and 4 were male. 4 of them held a BA degree, while 8 were involved in Ph.D. studies, and one was pursuing an MA degree. 1 participant held a Ph.D., and 13 held an MA degree. 3 participants held DELTA certificates, while 1 participant had a CELTA certificate. Only 5 participants have received a formal AI training. Participants were selected by using convenience sampling methods and attended from the same university in which the data were collected (See Table 1 for the participants' demographic information).

Table 1. Participants' demographic information

Participant	Gender	Age	Years of experience	Obtained degree	AI training	AI Readiness
P1	F	52	29	BA	No	3,76
P2	F	34	11	PhD candidate	No	3,86
P3	F	54	30	BA	No	4,14
P4	F	52	30	BA	No	3,67
P5	F	35	13	MA	No	3,76
P6	F	34	5	MA	Yes	3,81
P7	F	27	6	MA, DELTA	Yes	4,38
P8	F	35	12	MA	No	5,29
P9	F	30	8	MA, CELTA, DELTA	No	5,00
P10	F	32	9	PhD candidate	No	4,86
P11	M	38	16	MA, DELTA	Yes	4,38
P12	F	28	5	MA	No	4,29
P13	F	29	5	MA	No	4,81
P14	F	30	7	PhD candidate	Yes	4,52
P15	M	33	9	PhD student	No	4,1
P16	F	34	13	MA	No	4,67
P17	F	34	14	PhD student	No	5,10
P18	F	36	11	PhD	No	4,52
P19	M	30	10	PhD candidate	Yes	4,24
P20	F	58	26	BA	No	3,90
P21	F	26	6	MA candidate	No	3,95
P22	F	28	6	MA	No	3,38
P23	F	37	15	MA	No	4,19
P24	F	32	8	MA	No	3,48
P25	F	31	8	PhD student	No	5,24
P26	M	27	2	MA	No	2,86
P27	F	49	26	PhD student	No	4,43

Instruments

Teacher AI Readiness Scale

To gain a comprehensive understanding of the teachers' AI readiness, researchers used a survey created by Ayanwale et al. (2022), which they adapted from previous studies (Chai et al., 2021; Chai, Wang & Xu, 2020; Keramati et al., 2011). The survey aimed to predict teachers' intention to teach AI, along with other factors such as AI anxiety, perceived usefulness, AI for social good, attitude towards using AI, confidence in teaching AI, the relevance of AI and readiness for AI. Responses were scored on a Likert scale ranging from "1" (strongly disagree) to "6" (strongly agree) and the survey was administered using Google Forms. The survey comprised two parts (Appendix A). The first part collected demographic data such as gender, age, and education level of the teachers. In the second part of the survey, we measured teachers' perceived AI readiness.

Semi-structured Interviews

In order to gather more in-depth data regarding the participants' perceptions about AIEd, we conducted interviews with seven teachers who responded to the interview email and volunteered. The interviews questions created by

Moorhouse (2024) were employed during the interview process (Appendix B). Individual interviews were conducted by one of the researchers who taught English at the institution where the study was done. The interviews were carried out face-to-face or online at a mutually agreed time and place between April and May 2024. Each interview lasted between 35 and 50 minutes. Each interview was recorded and transcribed verbatim for analysis. The interview questions provided direction for the interviews, nevertheless, it is necessary to state that each interview was distinctive, as the researchers used the participants' responses as prompts for deeper reflections.

Reaction Paper

To gain further insights into the utilization of AIEd tools in participants' professional practices, five teachers with the highest AI-orientation were invited to write a reflection paper. The researchers identified these participants taking the descriptive analysis into consideration, approached them in-person, and requested their reflections, which were distributed in hard copy format. The reflection paper prompted participants to elaborate on their specific use of AI by detailing the contexts, methods, and tools integrated (Appendix C).

Data Analysis

As we collected both quantitative and qualitative data in the study, data analysis entailed the utilization of both methodologies. Descriptive analysis was used to determine the level of teachers' readiness in integrating AI into EFL teaching and learning. The quantitative data obtained from the Teacher AI Readiness scale was analyzed with The Statistical Package for the Social Sciences (SPSS) program version 20. The qualitative data provided by the interviews and reflection papers were analyzed using thematic analysis approach by Braun and Clarke (2006). The themes were established using a five-stage reflexive and discursive coding process. These stages included reading the responses and rereading to become acquainted with the data, generating initial codes, and categorizing the codes. Lastly, extracts that demonstrated the themes were selected, and this article was composed. The whole analysis process sought to provide transparency and access to the participants' perspectives regarding generative AI readiness and their views towards the integration of these tools into their profession (Braun & Clarke, 2006).

Role of the Researcher

The first author is an EFL instructor at the university in which the data were collected. Given the fact that she conducted the interviews, collected the reflection papers, and administered surveys among her colleagues, it is vital to acknowledge both the benefits and potential biases inherent in this dual role as a researcher and colleague. Being a colleague of the participant teachers, she maintained a professional boundary with all the participants involved in the study, which fostered a level of trust and openness that may have enhanced the depth and quality of the data collected. Conversely, her dual role also introduces potential biases that may influence the research outcomes. She may have preconceived notions regarding the participants' experiences and perspectives owing to her involvement in the same workplace. To address this, we applied member checking by sharing the preliminary findings with the participants to make sure that their viewpoints were accurately represented. Additionally, participants may have given responses that they perceived as favorable to her as a colleague and researcher. To mitigate this risk, she highlighted the confidentiality of the responses and ensured them that their honesty was vital to the study's validity. By employing multiple data sources such as surveys, interviews and reflection papers, we triangulated the data. Finally, to eliminate any potential ethical concerns, we obtained informed consent from all participants and anonymized the data to protect the participants' identities and confidentiality was maintained to uphold the integrity of the research.

RESULTS

RQ1: How ready do they feel for the use of AIEd tools in their professional work?

To investigate participant teachers' readiness for the utilization of AIEd tools into their professional work, we employed the Teacher AI Readiness survey which incorporated six key constructs: AI anxiety, perceived usefulness, AI for social good, attitude towards using AI, confidence in teaching AI and readiness of AI. Descriptive analysis of the survey data revealed valuable insights into the participants' perceptions regarding their preparedness. In terms of AI anxiety, the survey revealed that participants expressed moderate levels of anxiety when considering the capabilities of AI, with an average score of M=3,07 (SD=1,00). They reported a moderate level of unease and upset feelings when they think about AI, with an average score of M=2,59 (SD=0,95).

Regarding perceived usefulness, participants perceive AI technology as highly useful. Participants reported that using AI technology enables them to accomplish tasks more quickly (M=5,19; SD=1,06), enhances their effectiveness (M=5,07; SD=1,11), and increases their productivity (M=4,63; SD=1,34).

As for AI for social good, participants hold a generally positive attitude towards the potential of AI for social good. Participants recognize the potential of AI to help disadvantaged people (M=5,11; SD=0,78) and promote human well-being (M=4,63; SD=0,88). They express a desire to use AI knowledge to serve others (M=4,37; SD=1,27), and believe that AI should aim to achieve common good (M=5,04; SD=0,78).

When it comes to their attitudes towards using AI, participants hold positive views towards using AI technology. They perceive using AI technology to be pleasant (M=4,85; SD=0,92), enjoyable (M=4,81; SD=1,11), and they have fun using AI technology (M=4,81; SD=1,14).

Regarding their confidence in teaching AI, the mean scores indicate slightly high level of confidence and positive perceptions of the relevance and usefulness. They believe that learning AI in class will be useful (M=4,89; SD=1,07), and they expect AI content to be relevant to their own experiences (M=4,48; SD:0,82). Furthermore, they feel that the content of AI is related to their lifestyle (M=4,26; SD=1,04), and the content of AI will be useful to them in terms of learning the concept effectively (M=4,89; SD=0,98).

As for the readiness of AI, participants express moderate levels of readiness for teaching AI, with varying degrees of confidence in various aspects. They believe that they have the relevant knowledge to teach AI (M=3,78; SD=1,21), however, they perceive having access to appropriate hardware to teach in AI at a slightly lower level, with a mean score of 2,96 (SD=1,29), and they perceive having access to appropriate software to teach AI at a similarly low level (M=2,89; SD=1,24). They believe that they have access to relevant content to teach AI at a moderate level (M=3,22; SD=1,26), and anticipate a moderate level support from the school administration for teaching AI in their classes (M=3,26; SD=1,04). These mean scores indicate a moderate level of readiness for teaching AI among the participants, with varying degrees of confidence and perceived access to resources.

RQ1: How ready do they feel for the use of AIEd tools in their professional work?

To gain a deeper understanding of the experiences and perceptions of the participants regarding the integration of AIEd tools in their profession, we conducted individual semi-structured interviews with the participants. These interviews provided rich qualitative data, shedding light on various aspects of the participants' interaction with AI in educational

settings. Table 2 summarizes the major themes and minor themes that were derived from the thematic analyses of the interview transcripts and reflection papers:

Table 2. Major and minor themes derived from qualitative analysis

Research Questions	Major Themes
RQ2: What are in-service English language teachers' perceptions of AIEd tools?	Teachers' familiarity with AIEd
	Students' use of AI tools
	Teachers' use of AIEd tools
	Challenges of AIEd
	Risks and ethical issues
	Changes in English language teaching
RQ3: How do AI-oriented in-service teachers integrate AIEd tools into their teaching practice?	Preparing testing materials
	Developing lesson materials
	Giving writing feedback
	Proofreading

Teachers' Familiarity with AIEd

To explore the extent of familiarity that in-service EFL instructors have with AIEd tools we investigated their prior knowledge and experiences. Participants shared varying levels of exposure, interest, and engagement with AIEd. P20 indicated, "I have been familiar with ChatGPT since I attended a workshop on AI", while P13 mentioned, "I'm very familiar to these tools as I'm really into them". P16 expressed her familiarity by highlighting the benefits: "I'm familiar with AI tools since they make life easier and save time". Additionally, P11 shared, "I know them quite well", whereas P1, P4 and P3 remarked, "I'm only familiar with ChatGPT".

Half of the instructors interviewed stated that they utilize AI tools both in their professional and individual lives. For instance, P11 reported, "I used them a few times for some academic purposes such as doing research, asking questions, and also for my job interviews and to get some ideas about various topics". In contrast, the other half of the instructors use such tools only in their professional practice.

Students' Use of AI Tools

Almost all participants perceived AIEd tools to aid EFL learners in their language learning endeavors. Nevertheless, when questioned about their views on whether their students should use AI tools, participants expressed several concerns. For instance, P4 articulated, "I guess they use it especially for writing tasks when they are given to be done at home. And yes, they should use it to learn about the developments, but they shouldn't use it excessively because it prevents them from being creative". In a similar vein, P13 stated, "It's good to see them as using these tools but sometimes they become so lazy just because they don't produce something by themselves". However, participants also acknowledged that students should be familiar with such tools. P16 expressed, "They should know about and use AI tools to be updated and catch up with new technological developments to be more useful to the society."

Participants were also asked about the essential knowledge and skills that they believe their students require to use AI effectively. Participants highlighted the significance of foundational understanding and practical skills that may

enable students to efficiently navigate and utilize AIEd tools. To illustrate, P13 highlighted the need for students to acknowledge how to use it responsibly and purposefully: "They should follow the new trends but need to be careful while using them, because they sometimes only trust these technologies to complete their tasks". Similarly, P4 echoed how students should use AI tools purposefully: "They should know how to use them, but not choose them because of laziness, they should make use of them to improve their language". P11 focused on practical skills: "They need to know how to write the correct prompts and when to use. They also need to know how to get feedback from AI tools". One participant, P20, emphasized the importance of training students on AIEd tools: "Students need to be thought how to use these tools, how they have to write their instructions to get useful feedback."

Teachers' Use of AI Tools

During the interviews, participants shared a range of strategies and applications that emphasize the potential of AIEd tools to enhance and support various aspects of both teaching and learning. The most commonly articulated strategies were utilizing AI tools lesson planning and developing materials. Additionally, P13 mentioned the use of AI for content creation: "I integrate AI to generate grammar presentation materials, visual materials, and vocabulary quizzes. They provide me with creative ideas and does it in seconds". P3 emphasized the use of AI for brainstorming:

> I generally use ChatGPT in the brainstorming stages for speaking and writing activities. This helps me and my students as well to generate ideas, explore different perspectives, and as a result we can proceed in a more structured and creative way.

P11 mentioned using AI for getting teaching ideas. She further added that even though she hasn't tried it yet, she is aware of the potential for creating rubrics and providing feedback on students' work and would consider utilizing AI for these purposes.

Challenges of AIEd

Despite the potential benefits of utilizing AIEd tools, participants also shared several challenges associated with utilizing AIEd tools into their teaching practices. These challenges range from technical issues to concerns about student dependency and accuracy. To illustrate, P1 and P3 both expressed that "these tools may not be 100% accurate and grammatically correct". In addition, P4 perceived keeping up with AIEd developments as challenging and related it to one's personality: "You need to be curios and interested in learning new things, follow technological developments, and have a tendency towards those issues". Another challenge in using AIEd tools was considered to be writing effective prompts. P11 elaborated on his experience:

> One of the challenges I experienced while using AIEd tools was coming up with a working prompt. I remember my initial encounters with ChatGPT, I used to edit my prompts again and again. It was difficult because you need to carefully adjust your content, and language".

P20 emphasized how following the latest developments in AIEd pose itself as a challenge: "I keep hearing from my colleagues, well there is this, it can do this, there is that and it can do this. I only know ChatGPT, which kind of makes me nervous not being as knowledgeable as they are".

Regarding the technical issues, participants focused on different aspects of the issue. For instance, P16 expressed, "In one of my classes, we don't have access to the Internet, so it makes things difficult as we cannot benefit from AIEd tools during the lesson", whereas P13 stressed the importance of a user-friendly design.

Risks and Ethical Issues

While examining the AIEd tools, it becomes imperative to investigate the potential risks and ethical concerns arising from the utilization of these technologies. Many participants reported uncertainty regarding these issues, yet they expressed personal viewpoints on the matter based on their own use of AIEd. To illustrate, P4 stated, "Maybe it can cause plagiarism if you cut, copy and paste it, but I'm not sure". Correspondingly, P13 mentioned that using some AIEd tools such as ChatGPT to complete academic writings carries some risks as students lack requisite ethical understanding. Emphasizing the aspects of reliability and dependency, P20 elaborated, "There are risks in terms of reliability and accountability. Increasing reliance on AI is a risk, making us dependent on the tool. It might have negative impacts on our critical thinking skills and spontaneity".

Changes in English Language Teaching

Participants expressed diverse perspectives on how the utilization of AIEd tools into educational settings may potentially transform English language teaching. For instance, P4 stated her optimistic perspective on how content creation would improve: "It can make it more practical by providing easy-to-reach materials and may save time because you don't have to waste time searching for and creating the piece of work you are supposed to do". Similarly, P13 mentioned her positive perspective on how such tools would make teaching and learning easier: "Everyone can reach and create anything anytime. This helps the learners find endless sources and content they may prefer to use. Also, it gives more ideas and sources to the lecturer." On the contrary, while some participants reported optimist insights, others reflected several concerns about the future of language teaching. P20 expressed her concern by stating: "I'm afraid it might make language learning less necessary" while P1 said: "In the future, we may not need EFL teachers anymore".

P11 provided an insightful commentary on the potential transformation of English language teaching methodologies, highlighting the transformative nature of future teacher roles:

> Right now, it is just a tool that helps learners in certain aspects, but in the near future, it will have great impacts on the role of teachers. We will teach about AIEd tools, and strategies regarding how to learn a language using these tools.

RQ1: How ready AI-oriented in-service teachers integrate AIEd tools into their teaching practice?

In response to the inquiry in terms of how AI-oriented in-service teachers integrate AIEd tools into their practice, 5 participants with the highest AI-orientation provided valuable insights into the specific purposes for which they utilize AI in their professional work in and outside the classroom and the AIEd tools that they commonly use in their teaching or professional practice. These tools included ChatGPT, Gemini, Grammarly, Turnitin, Read & Write, CathovenAI, ChatPDF, Scite, Gamma, and Knowt. Table 3 represents the AIEd tools that were utilized by AI-oriented in-service teachers in the study and the purposes for which they were used:

Table 3. AI-oriented in-service teachers' integration of AIEd tools

AI tools	Use case	Link/ Organization
ChatGPT	Developing lesson materials, lesson planning, alternating answers, assessment materials	https://chatgpt.com/
Gemini	Brainstorming	https://gemini.google.com/
Turnitin	Checking student plagiarism	https://turnitin.com
Grammarly	Providing written feedback, proofreading	https://app.grammarly.com/
CathovenAI	Generating questions, revising writing	https://www.cathoven.com/
ChatPDF	Analyzing PDFs	https://chatpdf.com
Scite	Understanding research articles	https://scite.ai
Gamma	Creating presentations	https://gamma.app/
Knowt	Creating AI flashcards, playing games	https://knowt.com/

Developing Lesson Materials

The most commonly expressed use of AIEd tools in the interviews was echoed in the reflection papers. P17 and P8 indicated that they utilize AIEd tools to design or create lesson plans. P17 reported using AI for developing materials while preparing for classes, especially when she doesn't have a fixed syllabus. She reflected that "I provide guidelines to see its suggestions for lesson planning, and then I combine it with my own plans to create something eclectic".

AI integration for lesson planning usually involves developing vocabulary and reading materials for P17. She stated that "there are AI tools that generate different types of questions by simply uploading the vocabulary for the lesson. Sometimes, I upload a reading text and ask it to create questions."

Another AI-oriented participant indicated that she utilized AI tools to present alternative responses to the tasks. She elaborated that "Sometimes the books we're using just say 'answers may vary', for those activities I ask ChatGPT to provide alternative answers. This also encourages my students to explore different possibilities and perspectives" (P9). In a similar vein, P10 reported utilizing AI tools with an attempt to personalize tasks and stated that "I use AI to alternate tasks in the coursebooks to make them relevant to my students' interests and backgrounds".

P8 reported using AI both in her personal and professional life. As for the professional aspects, she discussed how AI tools can be used to personalize learning experiences:

> Textbooks do not always meet my or students' expectations and needs, so I try to generate different and fun materials for my students. And if I have a specific target vocabulary, for example, I want it to create a text, post, or a blog.

Preparing Testing Materials

One of the participants with the highest AI-orientation was a member of the testing department at the institution. P25 expressed preparing tests for the departmental purposes, including vocabulary, reading, and listening questions. For all these purposes, she used ChatGPT. She specified how she proceeded:

> I use ChatGPT for writing a variety of question types. I specify the context and the level of the questions and give commands accordingly. Sometimes I provide the options so that it can create a better question stem.

P25 further states that she implements the same procedures for preparing reading and listening questions. As for

the reading, she either provides the context and level and command it to write a text, or she provides the text and ask ChatGPT to write questions. Regarding the listening questions, she asks ChatGPT to write either a dialogue or a lecture and write questions, or other times she pastes the audio scripts and asks for the questions. P25 further adds that "despite it helps me with the workload, I always feel the need to edit, correct, rewrite, simplify the content and questions it provides".

Giving Writing Feedback

AI-oriented teachers reported utilizing AI tools to give feedback to their students' writing papers. P9 explained how she integrated such tools with this purpose:

> I incorporate AI driven tools to give feedback on students' written works. It enables me to effectively evaluate my students' proficiency and provide constructive and detailed feedback without missing any points.

Proofreading

P9 is a member in the curriculum development department in the institution where the present study was conducted and expressed that "I utilize AI for proofreading to ensure the quality and accuracy of materials I create for both my students and the module/program I'm responsible for".

DISCUSSION

In the current study, we aimed to investigate the readiness and perceptions of in-service EFL regarding the integration of AIEd tools into their professional practices. Employing a quasi-experimental approach, both quantitative and qualitative data were collected and analyzed to gain a comprehensive understanding of the participants' perspectives.

The first research question explored EFL teacher AI readiness and the findings from the Teacher AI Readiness survey revealed a moderate level of readiness for integrating AI into their teaching practice. Even though they acknowledged the potential of AIEd to increase productivity and effectiveness, participant teachers also had some concerns regarding access to suitable resources and infrastructure. Additionally, the moderate levels of anxiety expressed by the teachers indicate that despite the awareness of AI's potential, there still seems to be apprehension about its utilization. The moderate scores on both readiness and access to appropriate hardware and software demonstrate a crucial barrier to AI utilization. This finding corroborates previous studies that emphasize the significance of sufficient infrastructure and support for an effective adoption of educational technologies (Chai et al., 2021; Keramati et al., 2011). To mitigate these external barriers, institutions need to invest in required resources and offer sustainable technical support to ensure a smooth transition to AI-enhanced teaching.

The qualitative data from the interviews and reflection papers enabled us to explore teachers' perceptions regarding AIEd in greater depth. Participants expressed varying levels of familiarity and engagement with AIEd tools, which ranged from basic awareness to regular use in both professional and personal settings. This difference underscores the necessity for tailored professional development opportunities that aim to cater for various levels of AI proficiency among teachers. Furthermore, teachers generally perceived AIEd tools as beneficial not only for their teaching practices but their students' learning experiences. For instance, they appreciate that AIEd could facilitate lesson planning, material development, and giving feedback, as a result, it improves the efficiency and effectiveness of both teaching and learning processes. However, the concerns about students' over-reliance on these tools and its potential undesirable effects on their creativity and critical thinking were prevalent. These concerns imply the need for

educators to guide their students in the responsible and purposeful use of AIEd tools by ensuring that these tools complement the fundamental learning processes than replace them. This could be accomplished by providing students with basic knowledge of AI, promoting an ethical use of AI, and building positive encounters that improves students' confidence in learning AI, which are emerging concerns for educators (Chai et al., 2021).

Alongside their positive perceptions regarding the utilization of AIEd into their practice, participant teachers also identified some challenges, including technical issues, the need for efficient prompt writing, and staying updated with the rapid technological advancements. This finding aligns with previous research studies (e.g., Sütçü & Sütçü, 2023) that found lack of knowledge and skills may lead to certain concerns and reservations (Ally, 2019; Seo et al., 2021). These perceived challenges point to the dynamic nature of AIEd and the continuous learning curve that is necessary for educators to maintain AI proficiency. In this regard, ongoing professional development becomes crucial to keep teachers updated with the novice AIEd advancements with an attempt to promote continuous improvement in their teaching practices. Ethical concerns were also reported during the interviews, and teachers share their worries regarding plagiarism, reliability, and dependency on AI tools. These expressed concerns highlight a need for well-defined guidelines and ethical frameworks to manage the utilization of AIEd, informing professional development programs both for pre-service and in-service teachers to empower them in their endeavors with AIEd.

Teachers' perceptions regarding the future of language teaching yielded various results. While some teachers held positive perceptions regarding the benefits it will bring and enhance teaching and learning processes, some teachers believed that it would make language learning less necessary. This finding corroborates previous research done by Sütçü & Sütçü (2023), which found that a few EFL teachers feared that AI has the potential to devalue manpower and decrease job opportunities. These concerns are substantiated as when AI systems can respond to student inquiries effectively, answer questions, and offer personalized learning resources, human roles may be decreased (Khogali & Mekid, 2023). Nevertheless, teacher roles entail more complex tasks including but not limited to creating a positive learning environment, supporting students emotionally, promoting critical and creative thinking, which cannot be replicated by AI currently (Chan & Tsi, 2023). To eliminate such concerns, it is vital to offer professional development for teachers, utilizing AI not as a replacement but as a complementary tool and highlighting the unique aspects of teaching which AI cannot replicate. Hence, teachers can leverage AI to improve teaching and learning while maintaining their fundamental roles in their profession.

CONCLUSION AND RECOMMENDATIONS

The present study aimed to shed light on the complex landscape of AI integration in English language teaching by exploring EFL AI readiness. There is a general readiness among the participant teachers and positive perception of AI's potential in teaching, however, significant challenges and ethical concerns were also reported. In this regard, the findings of this study present several promising implications. Teachers indicated positive attitudes towards AI, perceiving it as useful and enjoyable, which also demonstrates a readiness to utilize such tools in their practice. However, challenges regarding technical issues, the need for effective prompt writing, and concerns about AI dependency and accuracy were also expressed by the participants. In order to address these challenges, teacher training programs need to incorporate modules that introduces AI literacy to build teacher confidence and skills, address ethical considerations to eliminate risks regarding plagiarism and AI over-reliance. Moreover, decision-makers should provide sufficient access to required hardware and software.

As all studies, ours is also not without limitations. One limitation of the study is the relatively small sample

size. The participants were limited to 27 in-service EFL teachers at one institution, which may not represent the broader population and affect the generalizability in return. Therefore, future studies could involve a larger and diverse sample to increase the generalizability of the findings. It is also worth to remember that only a small number of participant teachers have received AI training, which may have shaped their perceptions and readiness levels accordingly. Future studies may expand the sample to include more participants with formal AI training and compare these two groups to gain a more comprehensive understanding of how formal AI training guides teachers' perceptions and readiness regarding AIEd tools and integration. Furthermore, it should be acknowledged that the study mainly concentrated on teachers' perceptions and readiness regarding AI tools without examining the different types of AI technologies in depth. As different AI tools may demonstrate diverse capabilities and implications for teaching practices, future research could examine specific AI tools more thoroughly to capture their distinctive effects.

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